

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the applications:

#### Listing of Claims:

1. (currently amended) An ~~AAV~~ AAV2 vector comprising a capsid protein with ~~an amino acid~~ a peptide insertion ~~following the capsid amino acid~~ at a position selected from the group consisting of:

- (a) ~~a position corresponding to~~ position 139 in the VP1 capsid (SEQ ID NO: 13) and
- (b) ~~a position corresponding to~~ position 161 in the VP1 capsid (SEQ ID NO: 13).

2. (currently amended) The ~~AAV~~ AAV2 vector of claim 1 wherein said position ~~corresponds to~~ is position 139.

3. (currently amended) The ~~AAV~~ AAV2 vector of claim 1 wherein said position ~~corresponds to~~ is position 161.

4. (currently amended) An ~~AAV~~ AAV2 vector comprising a capsid protein with ~~an amino acid~~ a peptide insertion ~~following the capsid amino acid~~ at a position selected from the group consisting of:

- (a) ~~a position corresponding to~~ position 459 in the VP1 capsid (SEQ ID NO: 13);
- (b) ~~a position corresponding to~~ position 584 in the VP1 capsid (SEQ ID NO: 13);
- (c) ~~a position corresponding to~~ position 588 in the VP1 capsid (SEQ ID NO: 13); and
- (d) ~~a position corresponding to~~ position 657 in the VP1 capsid (SEQ ID NO: 13).

5. (currently amended) The ~~AAV~~ AAV2 vector of claim 4 wherein said position ~~corresponds to~~ is position 459.

6. (currently amended) The ~~AAV~~ AAV2 vector of claim 4 wherein said position ~~corresponds to~~ is position 584.

7. (currently amended) The ~~AAV~~ AAV2 vector of claim 4 wherein said position ~~corresponds to~~ is position 588.

8. (currently amended) The ~~AAV~~ AAV2 vector of claim 4 wherein said position ~~corresponds to~~ is position 657.

9. (currently amended) The ~~AAV~~ AAV2 vector of claim 1, 2, 3, 4, 5, 6, 7 or 8 wherein the amino-acid peptide insertion comprises a targeting peptide.

10. (currently amended) The ~~AAV~~ AAV2 vector of claim 9 wherein the targeting peptide comprises the amino acids CDCRGDCFC (SEQ ID NO: 10).

Claims 11-16 (canceled)

17. (currently amended) The ~~AAV~~ AAV2 vector of claim 1, 2, 3, 4, 5, 6, 7, 8 or 10 wherein the insertion is flanked by a linker/scaffolding sequence.

18. (currently amended) The ~~AAV~~ AAV2 vector of claim 9 wherein the ~~amino acid~~ peptide insertion is flanked by a linker/scaffolding sequence.

Claims 19-20 (Canceled)

21. (currently amended) An ~~AAV~~ AAV2 vector of claim 17, wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and ALS carboxy terminal to the insertion.

22. (currently amended) An ~~AAV~~ AAV2 vector of claim 17 wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and LLA carboxy terminal to the insertion.

23. (currently amended) An ~~AAV~~ AAV2 vector of claim 17 wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and GLS carboxy terminal to the insertion.
24. (canceled)
25. (previously presented) A polynucleotide encoding the capsid protein of claim 1, 2, 3, 4, 5, 6, 7 or 8.
26. (original) A cell transfected with the polynucleotide of claim 25.
27. (withdrawn/currently amended) A method of producing ~~AAV~~ AAV2 vector comprising a capsid protein with ~~an amino acid~~ a peptide insertion, comprising growing a packaging cell and providing the packaging cell with helper virus functions, wherein said packaging cell comprises the polynucleotide of claim 25, the ~~AAV~~ AAV2 rep gene and a recombinant ~~AAV~~ AAV2 genome comprising DNA of interest flanked by ~~AAV~~ AAV2 inverted terminal repeats.
28. (withdrawn) The method of claim 27 wherein said cell expresses biotin ligase.
29. (withdrawn /currently amended) The method of claim 27 further comprising the step of treating said ~~AAV~~ AAV2 vector produced with biotin ligase.
30. (withdrawn /currently amended) A method of transferring a DNA of interest to a cell comprising delivering to the cell an ~~AAV~~ AAV2 vector of any one of claims 1 through 24.
31. (withdrawn) The method of claim 30 wherein the cell is a cancer cell.
32. (withdrawn) The method of claim 31 wherein the cell is an ovarian cancer cell.

33. (withdrawn) The method of claim 30 wherein the DNA of interest encodes a therapeutic peptide or a reporter peptide.

34. (withdrawn) The method of claim 30 wherein the DNA of interest is an antisense nucleic acid or ribozyme.

35. (withdrawn /currently amended) A pharmaceutical composition comprising the ~~AAV~~ AAV2 vector of any one of claims 1 through 24 in a pharmaceutically acceptable carrier.

36. (withdrawn /currently amended) An immunogenic composition comprising the ~~AAV~~ AAV2 vector of any one of claims ~~13, 19, 21~~ through 23 ~~or 24~~.

37. (withdrawn) A method for eliciting an immune response in an animal, said method comprising administering to the animal an immunogenic composition of claim 36.

38. (withdrawn /currently amended) A method of transferring a DNA of interest to a cell comprising delivering an ~~AAV~~ AAV2 vector encoding the DNA of interest to the cell, wherein said ~~AAV~~ AAV2 vector comprises a capsid protein containing one or more amino acid insertions that ablate the ability of the vector to bind heparin-sulfate proteoglycan and allow the vector to use a cellular receptor not used by wild type ~~AAV~~ AAV2 or DNA transfer.

39. (withdrawn /currently amended) A method of infecting a cell comprising administering an ~~AAV~~ AAV2 vector to the cell, wherein said ~~AAV~~ AAV2 vector comprises a capsid protein containing an amino acid insertion, wherein said ~~AAV~~ AAV2 vector comprises a capsid protein containing one or more amino acid insertions that ablate the ability of the vector to bind heparin-sulfate proteoglycan and allow the vector to use a cellular receptor not used by wild type ~~AAV~~ AAV2 for infection.

40. (withdrawn /currently amended) The method of claim 39 wherein the ~~AAV~~ AAV2 vector infects the cell at a titer comparable to wild type ~~AAV~~ AAV2 vector.

41. (canceled)

42. (currently amended) An AAV AAV2 vector of claim 18, wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and ALS carboxy terminal to the insertion.

43. (currently amended) An AAV AAV2 vector of claim 18 wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and LLA carboxy terminal to the insertion.

44. (currently amended) An AAV AAV2 vector of claim 18 wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and GLS carboxy terminal to the insertion.